



Interstate 29/35 Connections Project
103 W. 26th Ave.
North Kansas City, MO 64116

816.841.8888
www.kcicon.com

December 1, 2008

Mr. Joe Jones
MoDOT Design Division
1320 Creek Trail Drive
Jefferson City, Missouri 65109

Dear Mr. Jones:

We appreciate this opportunity to submit Interstate 29/35 unbonded concrete overlay of bridge approach slabs for the Practical Design 2009 Awards for Excellence.

Located in Kansas City, MoDOT's \$245 million kcICON design-build project will reconstruct 4.7 miles of Interstate 29/35 and five interchanges. The scope of work also includes the reconstruction, rehabilitation, or replacement of twelve bridge structures, including the new cable stay Christopher S. Bond Bridge over the Missouri River.

The contract was awarded to Paseo Corridor Constructors (PCC) in November 2007 and design will be completed in December 2008. Construction is scheduled to be completed by July 2011. With a fixed price contract, the stakeholders recognized that innovative design and cutting-edge technology provided an opportunity to provide the best value for every dollar spent on the project. PCC's innovative design concept allowed two long viaducts and an existing bridge at Armour Road to be salvaged. The corridor will mostly have all new concrete pavement. The existing approach slabs to the salvaged bridges currently have worn asphalt overlays and will receive unbonded concrete overlays which will match the newly constructed concrete pavement.

MoDOT has generally used full depth concrete approach slabs which often times become resurfaced with an asphaltic concrete overlay. The overlay eventually becomes deteriorated and needs to be rehabilitated. To save time, money and lessen impacts to motorists, PCC will construct a 4-inch unbonded concrete overlay over the existing bridge approach slabs rather than remove and replace the entire slabs. Unbonded concrete overlays have been used on existing roadway pavements in many states for over 30 years, but using an unbonded concrete overlay to rehabilitate an existing bridge approach slab is a new idea. It offers numerous advantages over other rehabilitation materials such as improved surface friction, noise, rideability, and a longer design life.

Attached is backup information showing design details for the unbonded concrete overlay along with relevant photos.

Thank you for your consideration.



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Sincerely,

A handwritten signature in blue ink that reads "James N. Kramer".

Jim Kramer
Paseo Corridor Constructors

Attachments.

2009 APPLICATION FORM

(required for each entry)

Complete this section for (check one): **Small Project**

XLarge Project

Post-Design Solution

Off System Project

Job No. J4I1507

Route I-29/35

County / LPA Clay/Jackson

Description (attach separate sheet if necessary) Rehabilitation of existing bridge approach slabs with an unbonded concrete overly. This innovative design is being used in place of a more costly alternative of removing the existing approach slabs and replacing with new concrete bridge approach slabs.

Complete this section for: **Process Improvement**

Process or Product _____

Description (attach separate sheet if necessary) _____

Project Leader Bryan Wilkerson (PCC)

Key Team Members (include key personnel irrespective of employer-nine individuals maximum)

Sohila Bemanian (Parsons) Kim Wilson (PCC) Thad Kismicki (Parsons)

Jim Kramer (Parsons) Jim Shipley (MoDOT) Todd Owens (PCC)

Tom Skinner (MoDOT) Brian Kidwell (MoDOT)

Project Budget:

Initial Cost / Estimate \$ 315 million **Final Cost / Award** \$ 232 million

What would make this entry stand out from the rest of the entries when considering MoDOT's practical design philosophy? (In layman's terms - 200 words or fewer-attach separate sheet if necessary) This practical design of constructing an unbonded concrete overlay on an existing concrete bridge approach slab borrows from a successful history of unbonded resurfacing of concrete pavements over the past 30 years in many states. This design will provide a new concrete driving surface up to the ends of several bridges on this project. An improved and durable riding surface is achieved without the expensive removal and replacement of bridge approach slabs. This design has statewide applications on existing bridge approach slabs that have become deteriorated and need to be rehabilitated or replaced. On this project, this technique removes the deteriorated asphaltic concrete overlay currently on the bridge approach slabs and replaces it with a 4-inch concrete overlay. Resulting improvements include surface friction, noise, rideability, and

longer design life.

Send entries to: MoDOT Design Division, ATTN: Joe Jones
1320 Creek Trail Dr., Jefferson City, Missouri 65109

ALL ENTRIES MUST BE RECEIVED NO LATER THAN CLOSE OF BUSINESS ON DECEMBER 1, 2008

Unbonded Concrete Overlay Process – Bridge Approach Slab

1. Rotomill the existing asphalt surface to a minimum depth of 4 inches.
2. Spalls and other surface defects shall be free of loose material prior to placing the overlay.
3. Place an interlayer between the existing concrete surfaces and the new concrete overlay.
4. The interlayer shall consist of an approved woven geotextile fabric with a minimum puncture resistance of 150 psi. The geotextile fabric shall be unrolled in the direction of traffic, stretched taut and then fastened with nails to hold in place.
5. The concrete overlay shall be a minimum depth of 4 inches.
6. The concrete overlay shall not be opened to all types of traffic until the concrete has attained a minimum compressive strength of 3500 psi.
7. The joints shall be spaced 4'-0" longitudinally and transversely. The minimum depth of the joint shall be 1.5 inches and the width of the joint shall be 0.125 inch maximum. Sawing of the joints shall not cause excessive raveling.

File Name: C:\VY_WORKING_XHPTG\00438\10MHS13262SV-0K10.DCN
User#: P0043881
Title Plotter: 917108 AM
Date Plotted: 11/26/2009
Plot Table: KCI0N.TBL

Unbonded Concrete Overlay – Bridge Approach Slab



